

Biobutanol:

A New Entrant in the Biofuels Market

William A. Frey, Global Business Director
DuPont Biofuels

***USDA Agricultural Outlook Forum
March 1, 2007***



Forward-Looking Statement

During the course of this presentation, I would like to remind you that we may make forward-looking statements. All statements that address expectations or projections about the future are forward-looking statements. Some of these statements include words such as 'expects,' 'anticipates,' 'plans,' 'intends,' 'projects' and 'indicates.' Although they reflect our current expectations, these statements are not guarantees of future performance, but involve a number of risks, uncertainties, and assumptions. We urge you to review DuPont's SEC filings, particularly its latest annual report on Form 10-K and quarterly reports on Form 10-Q, for a discussion of some of the factors which could cause actual results to differ materially.

DuPont: Driving Sustainable Growth

Renewable Materials & Energy



**Alternatives to petroleum
and petroleum-based
products**



- **Energy security**
- **Protecting the environment**
- **Rural agricultural development**

Proof Point for Industrial Biotechnology...

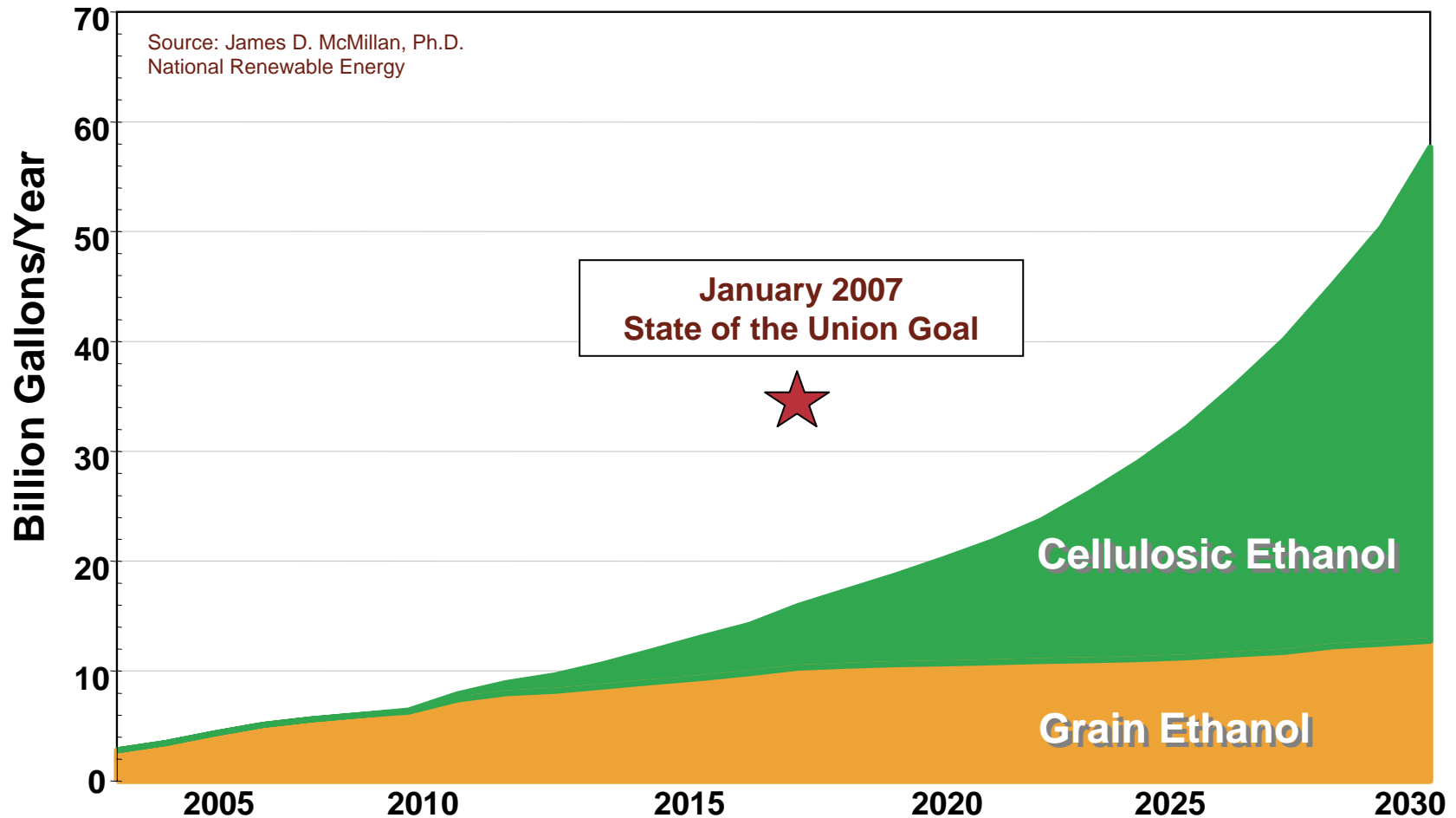
- Bio-PDO™ from corn - not petroleum
- Successful start-up at Loudon, Tennessee
- Sorona® polymer applications

First commercial Bio-PDO™ Shipment
November 27, 2006



The miracles of science®

U.S. Biofuels Growth Accelerating



DuPont Biofuels Strategy: 3 Segments



Seed & Crop Protection Solutions

Agricultural Inputs
Seeds & Crop Protection
2006 Revenue > \$300 million



Advanced Biofuels

Biobutanol



Biofuels From Biomass

Cellulosic Fuels

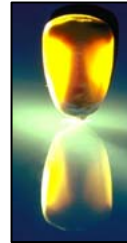
1. Seeds and Crop Protection for Biofuels

Pioneer IndustrySelect™ Grains, Oilseeds and Crop Protection Chemistry

Ethanol Market

Corn Hybrids

- *Pioneer hybrids with 2-4% higher ethanol yield per bushel*
- *Pipeline traits for higher ethanol value*
 - *Bushels/acre, Ethanol/bushel*
 - *Enhanced co-product value*



Biodiesel Market

Canola, Sunflower & Soy

- *High oil content*
- *Reliably high, consistently yielding hybrids*
- *Minimum energy, labor & chemical inputs*
- *Value added co-products*



Crop Protection Products

- *Weed, disease & insect control*

Crop Protection PlusSM



The miracles of science™

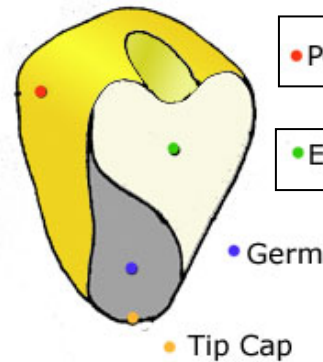
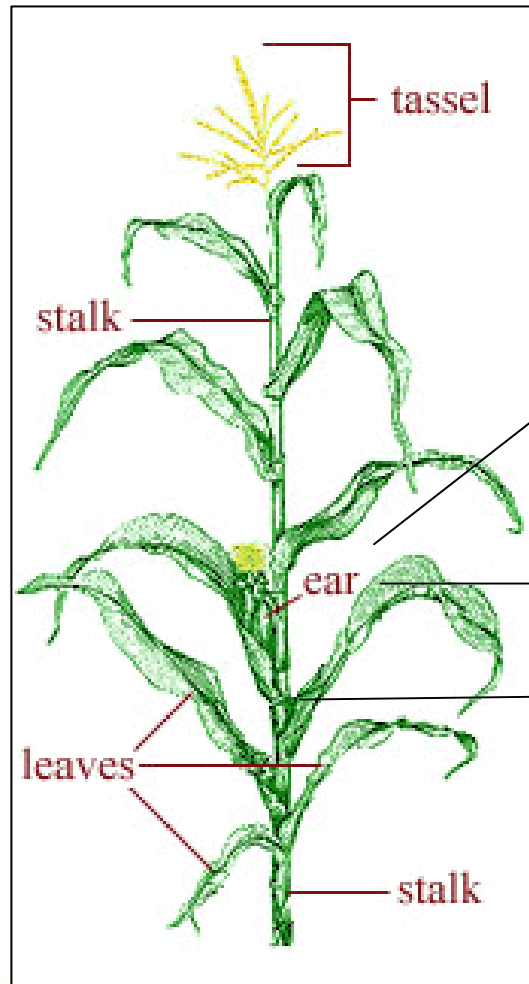
2. Cellulosic Ethanol :

Enabling Rapid Growth of Biofuels



Cellulosic Ethanol :

Enabling Rapid Growth of Biofuels



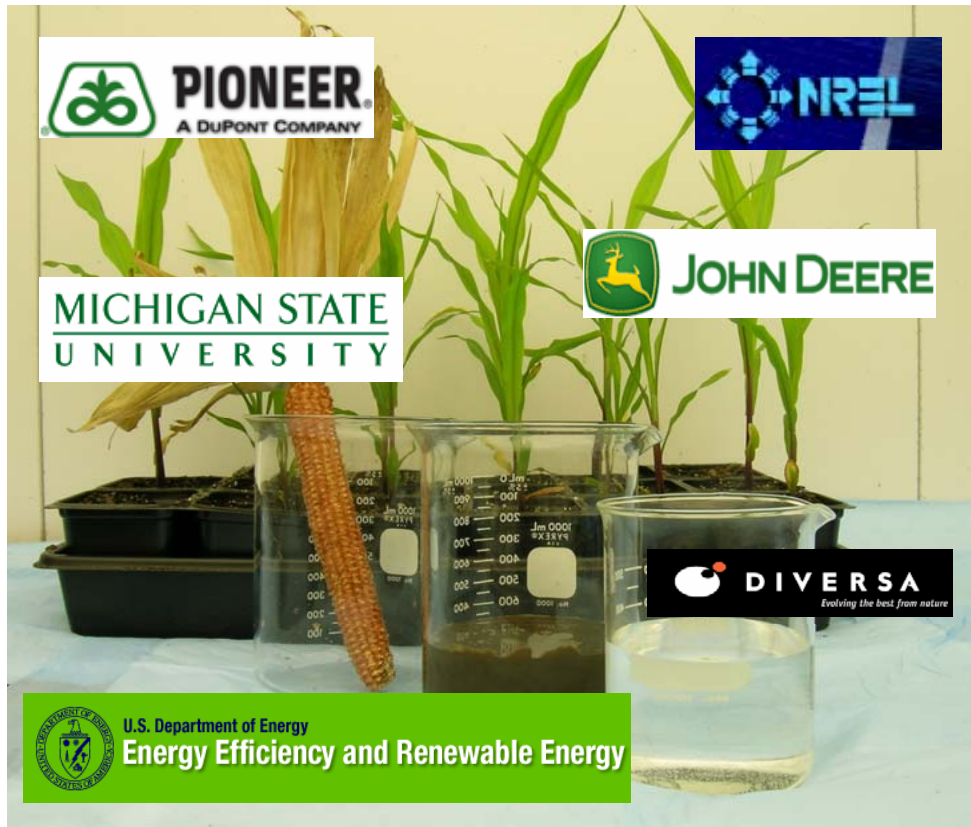
Pericarp → **40 Gal/Acre**
 Endosperm → **391 Gal/Acre**



at 50%
removal
rate → **155 Gal/Acre**

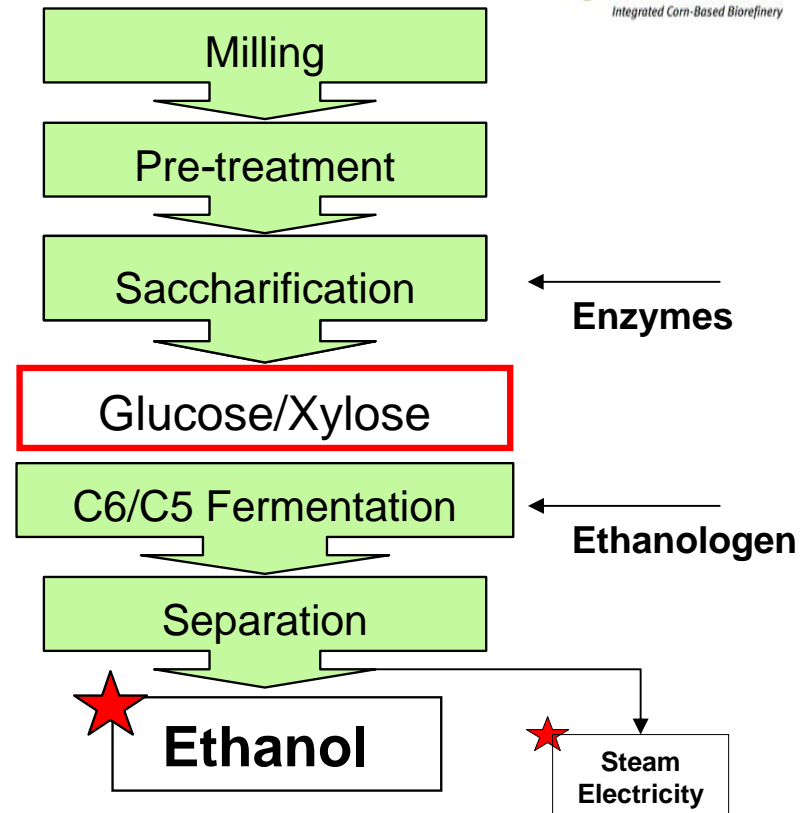
310 Gal/Acre

Advancing Cellulosic Ethanol Fermentation



Broin
companies
ETHANOL. BIOREFINING. LEADING THE REVOLUTION.

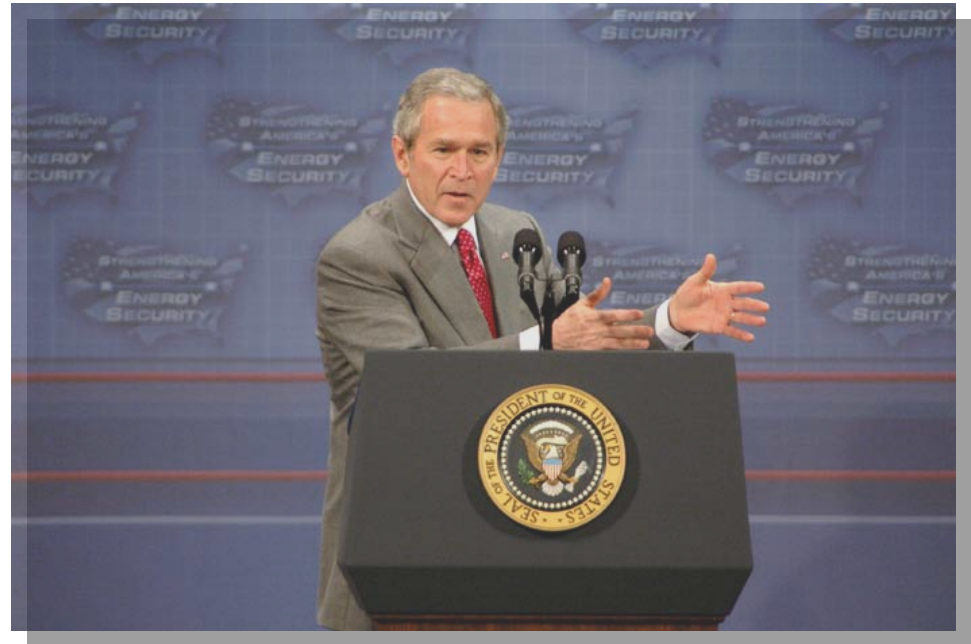
DUPONT
The miracles of science™



President Bush Visits DuPont – January 2007

State of the Union Address

- “Twenty in Ten” – reduce gasoline usage by 20% in ten years
- 35 B gallons of renewable and alternative fuels by 2017

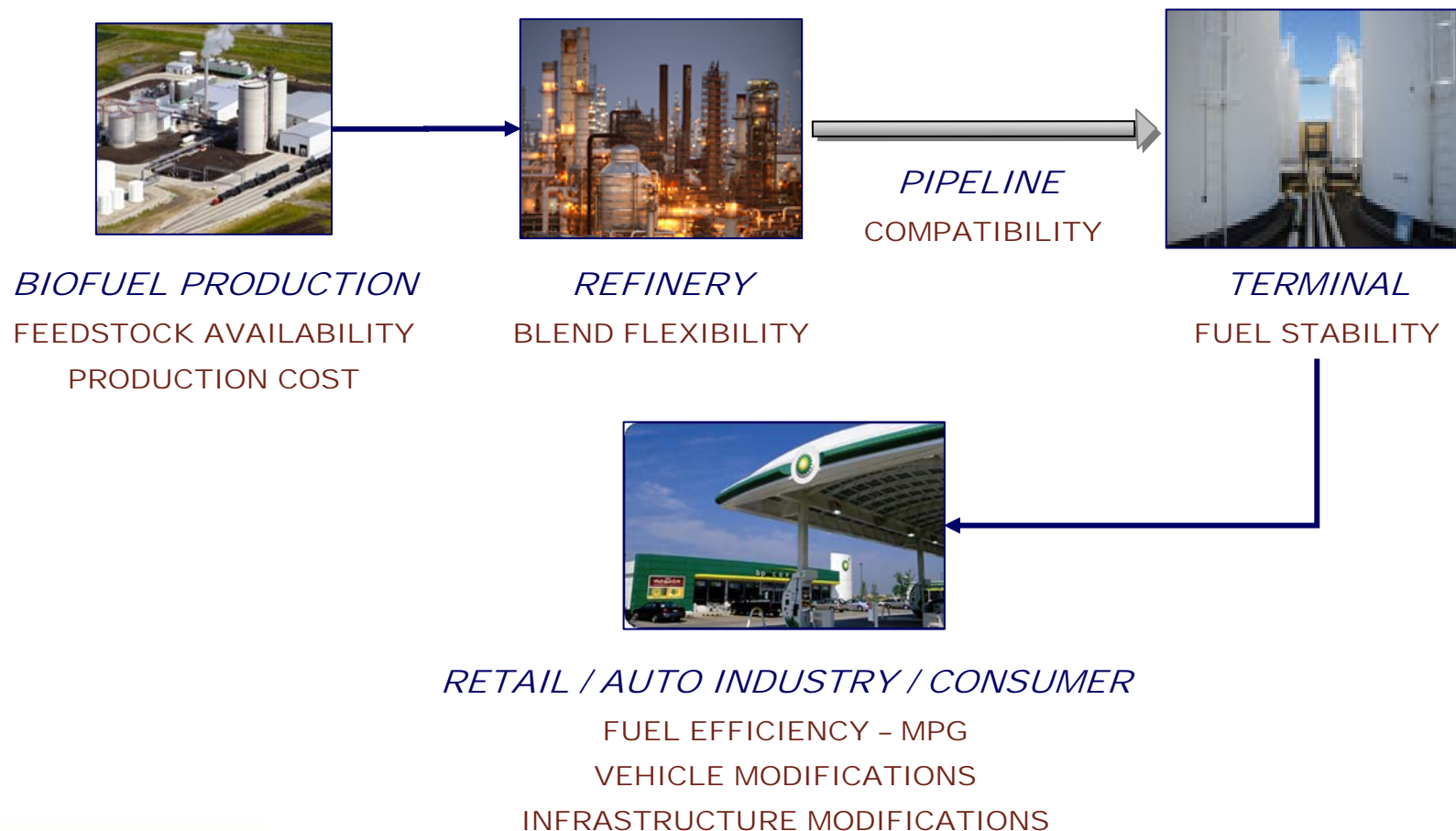


"I came wondering whether or not cellulosic ethanol was one of these things down the road that may be happening, may not, could end up being science or science fiction. It's going to be science. It's working."

- President George W. Bush, 1/24/07

Biofuels Market Perspective

Current Biofuel Challenges:



3. Biobutanol: Next Generation Biofuel

What should an Advanced Biofuel be?

- High energy density?
- Easy to handle and blend?
- Less corrosive?
- Produced from multiple feedstocks?
- Compatibility with ethanol?
- Cost competitive with ethanol?

Biobutanol



*DuPont R&D
Target*

Biobutanol: Next Generation Biofuel

- **Advanced biofuels respond to all drivers – energy security, agricultural development & environment**
- **Biobutanol has a number of attractive properties:**
 - Produced from same feedstocks as ethanol
 - Easily blended into gasoline
 - Uses existing fuel infrastructure without major modification
 - Potential to be used at higher blend concentrations in unmodified vehicles
 - Energy content closer to that of gasoline – reducing the impact on fuel economy for the consumer
- **Biobutanol is complementary to ethanol and can enhance the performance of ethanol blends in gasoline**

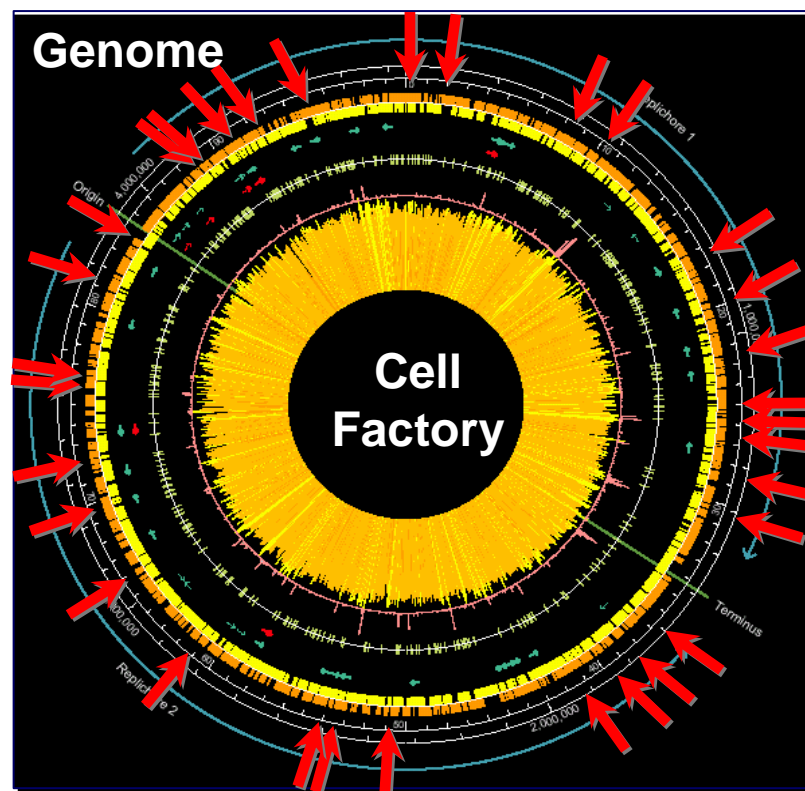


Biobutanol: Building an Advanced Biofuel

Cell “Software” by DuPont

Metabolic Engineering

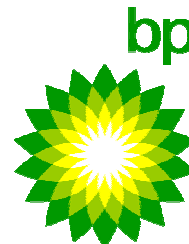
- Technology leader
- Leveraging our Bio-PDO™ success
- Engineering the cell to produce the desired fuel at competitive cost



DuPont - BP Biofuels Partnership

Biobutanol Development & Launch

**RENEWABLE
FEEDSTOCKS**



**WORLDWIDE
FUEL MARKETS**



- Powerful partnership
- Shared commitment
- Global reach
- Complementary capabilities

Biobutanol: Next Generation Biofuel



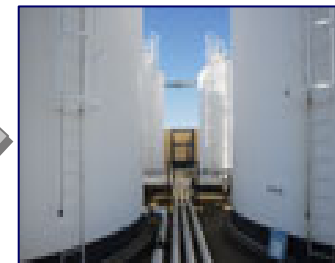
BIOFUEL PRODUCTION



REFINERY



PIPELINE



TERMINAL

- SAME AGRICULTURAL FEEDSTOCKS
- EXISTING ASSETS RETROFITTABLE
- SUPPORTS AGRICULTURAL DEVELOPMENT

- LIMITED WATER ABSORPTION
- FUNGIBLE BLENDING COMPONENT
- PIPELINE FEASIBLE
- LESS CORROSIVE
- EXISTING INFRASTRUCTURE



RETAIL / AUTO INDUSTRY / CONSUMER

- BETTER FUEL CONSUMPTION
- OXYGEN CONTENT SUPPORTS HIGH BLEND RATIOS
- HIGHER BLEND LEVELS WITHOUT VEHICLE MODIFICATION

DuPont Biofuels

Development Milestones

Differentiated —————> **Transformative** —————>



Seed & Crop Protection Solutions

- IndustrySelect™ Ethanol Hybrids - commercial
- Increased Ethanol II – Phase 1
- Increased Yield I – Phase 1

Agricultural Inputs
Seeds & Crop Protection
2006 Revenue > \$300 million



Advanced Biofuels

Biobutanol

- Initial Targets Achieved
- US & EU Fleet Testing Underway
- UK Plant Startup and Market Intro



Biofuels From Biomass

Cellulosic Fuels

- DOE Project
- Demonstration Unit
- Broin Collaboration

Innovation Across 3 Centuries



The miracles of science™

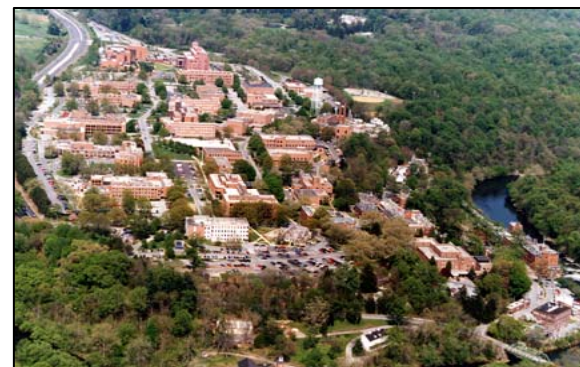
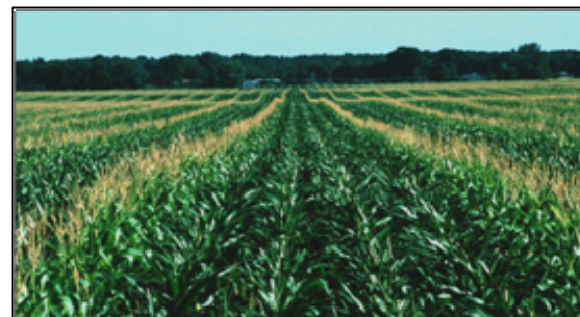
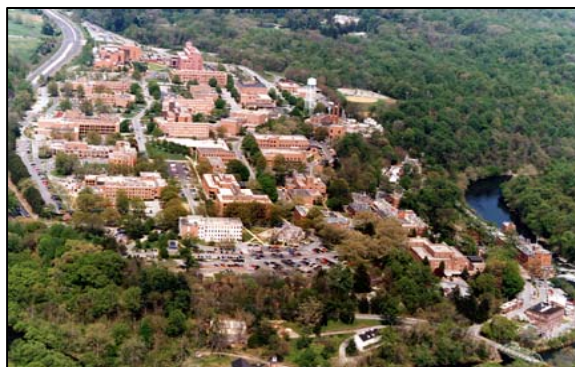
DuPont Bio Leadership

- Industrial Biotechnology
- Seeds: Pioneer®
- BioFuels
- Biomaterials: Bio-PDO™, Sorona®

DuPont R&D Advances

- Industrial Chemistry
- Polymer Science
- Nylon, Spandex, Teflon®
Tyvek®, Kevlar®, Nomex®,
Corian®, TiO₂, Suva®, etc

Hagley Powder Mills “Birthplace of DuPont”



The miracles of science™



The miracles of science™



The miracles of science™